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RATNER AND PRESTIA
Suite 301
One Westlakes, Berwyn
P.O. Box 980
Valley Forge, PA 19482-0980

EXAMINER

JORGENSEN, LELAND R

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 04/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/824,397

Applicant(s)

HORIKI, TOSHIO

Examiner

Leland R. Jorgensen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 21 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 21 only adds elements already described in claim 6.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 26, 27, and 29 - 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Sigel, USPN 5,168,531.

Claim 26

Sigel teaches an information display method. The method comprises imaging step of capturing an image of an object [with video camera 24]. Sigel, col. 4, lines 5 – 12; and figures 1 and 2. A image processing step processes the image captured by the imaging step [by an analog-to-digital computer 41 to provide image data representing samples of the image]. Sigel, col. 4, lines 5 – 12; col 4, line 59 – col. 5, line 2; and figures 1 and 2. A position detecting step detects from the processed image the position of the object on a display [by object recognition computer

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42]. Sigel, col. 4, lines 5 – 12; col. 5, lines 45 – 63; and figures 1 and 2. A display step displays prescribed information, separately obtained from the imaging step, [using work station computer 43] on the display 21 [on the video display screen 30]. Sigel, col. 5, lines 64 – 67; and figures 1 and 2. A control step of displays a designated pointer [cursor 29] on the display [video display screen 30] in accordance with the position of the object [pointing finger 28] detected by the position detecting step. Sigel, col. 4, lines 12 – 17; and figures 1 and 2.

Claim 27

Sigel teaches that the image captured by the imaging step is a fingertip [pointing finger 28]. Sigel, col. 4, lines 12 – 17; and figures 1 and 2.

Claim 29

Sigel teaches that the image processing step extracts a contour of the image, and the position detecting step detects the position of the image on a screen from the extracted contour. Sigel, col. 5, lines 12 – 44.

Claim 30

Sigel teaches that the image processing steps performs processing on portions of the image that are designated by a specific color. Sigel, col. 5, lines 3 – 11.

Claim 31

Sigel teaches an input step of carrying out a control input on an object pointed to by the designated pointer on the display surface. Sigel, col. 4, lines 27 – 58.

Claim 32

Sigel teaches that the designated pointer is displayed by detecting a fingertip as the image [pointing finger 28]. Sigel, col. 4, lines 12 – 17; and figures 1 and 2.

Claim 33

Sigel teaches that the position detecting step compares the image captured by the imaging step or the image extracted by the image processing step with a plurality of image patterns corresponding to the control inputs respectively, and when the captured or extracted image matches any one of the image patterns, the input step carries out a control input that corresponds to the matched image pattern. Sigel, col. 6, lines 30 – 64.

Claim 34

Sigel teaches that the position detecting step compares the images captured by the imaging step or the images extracted by the image processing step with a combination of a plurality of image patterns corresponding to one of the control input, and when the captured or extracted image match any one of the combination of image patterns, the input step carries out a control input that corresponds to the matched combination of image patterns. Sigel, col. 6, lines 30 – 64.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6 –12, 17 – 19, 21 – 25, 28, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sigel in view of Adair et al., USPN 6,424,369 B1.

Claim 6

Sigel teaches an information display device that comprises imaging means of capturing an image [video camera 24], image processing means [analog-to digital computer 41], position detecting means [object recognition computer 42], display means [display 21 with video display screen 30], and control means [work station computer 43] of displaying a designated pointer [cursor 29] on the display surface [video display screen] in accordance with the position detected by the position detecting means. Sigel, col. 4, lines 5 – 17; col. 4, line 59 – col. 5, line 2; col. 5, lines 45 – 67; and figures 1 and 2.

Sigel does not teach an antenna for transmitting and receiving radio waves for wireless communications.

Adair teaches an antenna 36 for transmitting and receiving radio waves for wireless communications. Adair, col 7, lines 55 – 57; and figure 2. Adair teaches transmit processing means of processing a signal to be transmitted in the form of the radio waves; and receive processing means of processing the radio waves received by the antenna as a signal [transceiver/amplifier section 70]. Adair, col. 10, lines 6 – 31; and figure 4. Adair also teaches Imaging means for capturing an image [camera module 10]; image processing means [video processor board 50], and display surface [video view screen 26]. Adair, col. 7, lines 25 – 33, 43 – 45, 60 – 64; col. 8, lines 19 – 23; col. 9, lines 47 – 54; and figures 2 and 4.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the information display device with antenna as taught by Adair with the information display device as taught by Sigel. Adair invites such combination by teaching,

It is one general object of this invention to provide a video system in combination with a standard PDA enabling a user to take video images by a very small camera module incorporated within the PDA, view the video images taken on a video viewscreen incorporated within the PDA, and to have the capability to store, download the video images, and send the video images electronically through a communications network.

Another object of this invention is to provide a PDA with the ability to not only transmit video images taken by the camera module, but also to receive video images sent from a remote location via the communications network, and to view such received video images on the video view screen of the PDA. Accordingly, the invention is ideally suited for video teleconferencing.

It is another object of this invention to provide a reduced area imaging device incorporated within a PDA which takes advantage of "camera on a chip" technology, but to rearrange the video processing circuitry in a selective stacked relationship so that the camera module has a minimum profile.

It is yet another object of this invention to provide imaging capability for a PDA wherein the video camera used is of such small size that it can be stored in the PDA when not in use. The camera module is attached to the PDA by a retractable cord which enables the imaging device to be used to image anything at which the camera module is pointed by the user without having to also move the PDA away from the view of the user.

In all applications, to include use of the imaging device of this invention with a PDA, "camera on a chip" technology can be improved with respect to reducing its profile area, and incorporating such a reduced area imaging device within a PDA such that minimal size and weight is added to the PDA, and further that the imaging device can be used to image selected targets by the user.

Adair, col. 3, line 58 – col. 4, line 27.

Claims 7 and 28

It is inherent to that the video view screen 26 shown in Adair figure 6 would be smaller than the capture region. For example, assume that the camera module was aimed at a person. The capture region would include the image of the person including a portion of the background

such as the Empire State Building in New York City. The video view screen is smaller than the person and the Empire State Building included in the capture region.

Claim 8

Sigel teaches that the image processing means extracts a contour of the image, and the position detecting means detects the position of the image on a screen from the extracted contour. Sigel, col. 5, lines 12 – 44.

Claim 9

Sigel teaches that the image processing means performs processing on portions of the image that are designated by a specific color. Sigel, col. 5, lines 3 – 11.

Claim 10

Sigel teaches an input means of carrying out a control input on an object pointed to by the pointer on the display surface. Sigel, col. 4, lines 27 – 58.

Claim 11

Sigel teaches that image pattern registering means in which are registered one or a plurality of image patterns associated with one or a plurality of the control inputs respectively, and wherein the input means compares the image captured by the imaging means or the image extracted by the image processing means with the image patterns stored in the image pattern registering means and, if the extracted image matches any one of the image patterns, carries out a control input that corresponds to the matching image pattern. Sigel, col. 6, lines 30 – 64.

Claim 12

Adair teaches a main body [PDA 22] containing at least the imaging means [camera module 10] and the antenna 36, display part [mounted cellular telephone 190] containing at least

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the display means [visual display 196], and joining part [mounting means 192] for joining the main body to the display part in an angularly movable fashion. Adair, col. 11, lines 13 – 25; and figures 6a and 6b.

Claim 17

Sigel teaches the step of performing a prescribed gesture so as to be captured by the imaging means, wherein the control output is produced by the prescribed gesture. Sigel, col. 4, lines 28 – 58.

Claim 18

Sigel teaches a program for causing a computer to function as all or part of the means of the information display device, the means consisting of imaging means of capturing an image, image processing means of processing the image captured by the imaging means, position detecting means of detecting from the processed image the position of the image on a screen, and display means of displaying prescribed information on a display surface. Sigel, col. 4, lines 12 – 58.

Claim 19

Sigel teaches a program for causing a computer to function as all or part of the input means of the control input device, the input means carrying out a control input on an object pointed to by the pointer on the display surface. Sigel, col. 4, lines 12 – 68.

Claim 21

Adair teaches an antenna 36 for transmitting and receiving radio waves for wireless communications. Adair, col 7, lines 55 – 57; and figure 2. Adair teaches transmit processing means of processing a signal to be transmitted in the form of the radio waves; and receive

processing means of processing the radio waves received by the antenna as a signal [transceiver/amplifier section 70]. Adair, col. 10, lines 6 – 31; and figure 4.

Claim 22

Sigel teaches that the image that the imaging means captures is a fingertip [pointing finger 28]. Sigel, col. 4, lines 12 – 17; and figures 1 and 2.

Claim 23

Sigel teaches that the designated pointer is displayed by detecting a fingertip as the image [pointing finger 28]. Sigel, col. 4, lines 12 – 17; and figures 1 and 2.

Claim 24

Sigel teaches that the position detecting means compares the image captured by the imaging means or the image extracted by the image processing means with a plurality of image patterns corresponding to the control inputs respectively, and when the captured or extracted image matches any one of the image patterns, the input means carries out a control input that corresponds to the matched image pattern. Sigel, col. 6, lines 30 – 64.

Claim 25

Sigel teaches that the position detecting means compares the images captured by the imaging means or the images extracted by the image processing means with a combination of a plurality of image patterns corresponding to one the control input, and when the captured or extracted images match any one of the combination of image patterns, the input means carries out a control input that corresponds to the matched combination of image patterns. Sigel, col. 6, lines 30 – 64.

Claim 35

Adair teaches that the display is used for a portable communication terminal or a portable telephone. Adair, col. 5, lines 45 – 52; col. 8, lines 10 – 13; and figure 6a.

6. Claims 14, 15, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adair in view of Lucente et al., USPN 5,566,098.

Claim 14

Adair teaches portable communications terminal comprising a display part [mounted cellular telephone 190] having a display surface [visual display 196], a main body [PDA 22] having at least an antenna 36 for transmitting or receiving radio waves for wireless communications, and speaker 76 for outputting voice, and a joining part [mounting means 192] for joining the display part to the main body in an angularly movable fashion. Adair, col. 11, lines 13 – 15; and figures 6a and 6b.

Adair does not teaches an attitude detecting means of detecting the attitude of the main body.

Lucente teaches an attitude detecting means [position buttons 53 – 56] of detecting the attitude of the main body [housing 10]. Display orientation switching means [switch card 50] switches the orientation of the image displayed on the display part [flat panel display 12] based on a detection result output from the attitude detecting means. Lucente, col. 2, line 67 – col. 3, line 2; col. 6, line 31 – col. 7, line 13; and figures 1 – 4.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the attitude detecting means as taught by Lucente with the portable communications terminal taught by Lucente. Lucente invites such combination by teaching,

In any case, there is a demand in the industry for a pen-based computer which is comfortable to use and which can easily accommodate both right-handed and left-handed writers.

Lucente, col. 2, lines 48 – 51. Lucente adds,

Accordingly, it is one object of the present invention to provide a pen-based computer which can be easily and comfortably used by both left-handed and right-handed writers. The pen-based computer has a configuration which provides a comfortable writing surface and proper viewing angle when the computer is supported either on a flat surface or at an angle. The configuration of the pen-based computer further enables the computer to be comfortably gripped, held, and easily picked-up from a support surface.

Further, it is another object of the present invention to provide a pen-based computer having a flat panel display with a rotating function which enable the computer to be rotated in 90 degree increments while maintaining correct alignment of the text, data and graphics on the flat panel display.

Lucente, col. 4, lines 1 – 18. Lucente concludes,

Accordingly, the present invention provides a pen-based computer with adaptability for either left-handed or right-handed users. Moreover, the configuration of the computer housing provides a design which is aesthetically pleasing and which can be comfortably used. The angled side surfaces have a configuration which provides an optimum writing surface for both right and left-handed users while still providing proper viewing of the screen. Further, the pen-based computer maintains the speed and versatility of larger computers, yet is easily transportable because of its smaller size.

Lucente, col. 11, lines 41 – 51.

Claim 15

Lucente teaches that the attitude detecting means detects the attitude of the main body by using a mercury switch. Lucente, col. 7, lines 5 – 13.

Claim 20

Lucente teaches a program for causing a computer to function as all or part of the means of the portable communications terminal, the means consisting of attitude detecting means of detecting the attitude of the main body, and display orientation switching means of switching the orientation of the image displayed on the display part, based on a detection result output from the attitude detecting means. Lucente, col. 7, line 14 – col. 8, line 20; and figure 10.

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adair in view of Lucente et al. as applied to claim 14 above, and further in view of Hedberg, USPN 6,411,275 B1.

Claim 16

Neither Sigel nor Lucente teach that the orientation detecting means detects the attitude of the main body by using a gyro.

Hedberg teaches that movement sensitive means 6 detects the attitude of the main body by using a gyro. Hedberg, col. 2, lines 37 – 43; col. 3, lines 35 – 42; and figure 1.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the gyro as taught by Hedberg with the portable communications terminal as taught by Sigel and Lucente. Hedberg invites such combination by teaching,

Consequently, a problem associated with prior art computer configurations is that access is needed to several types of computers provided with different displays suitable for different kinds of applications. As described above, a very small sized flat-panel of a hand-held data entry device, a mobile telephone, or a computer etc. is not at the same time capable of displaying full-screen documents in a proper and readable way.

Hedberg, col. 1, lines 51 – 58. Hedberg adds,

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It is an object of said invention to provide a hand-held display device for use with an electronic device, said display device being suitable for the purpose of a hand-held data entry device as well as for both landscape and portrait presentations of a full-page word processing document. Further, it can satisfy the needs of an engineer working with CAD-applications as well as for the display of text and graphic information. Also, hand-held computers can be provided with a display device of the present invention.

Consequently, another object of said invention is to provide a hand-held display device for use with a computer to display a complete or a determined part of a screen image in a proper size with regard to the current needs or requirements of a user.

Still another object of said invention is to provide a display device incorporated in an electronic device such as a mobile telephone, a PDA (Personal Digital Assistant), an organizer, a data terminal to display a complete or a determined part of a screen image in a proper size with regard to the current needs or requirements of a user.

These objects are accomplished by a display device having movement sensitive means such as a micro gyroscope, strain gauge, piezo-electric, or equilibrium of force accelerometer etc incorporated in said display device, thereby being responsive to movements in the space for displaying the complete screen image in different magnifications, or in different parts.

Hedberg, col. 2, lines 16 – 43.

8. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeom et al., USPN 5,943,625, in view of Nishiyama et al., USPN 5,436,954.

Claim 1

Yeom teaches a portable communication terminal [remote control unit 200] comprising at least a speaker 225 for outputting voice and a pointing device [cursor control device 25] for controlling at least a cursor. The speaker is disposed on the top side of the unit and the cursor

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control device is disposed on the backside of the unit. Yeom, col. 5, lines 41 – 52; and figures 2 and 6.

Yeom does not teach a display part for displaying an image and a joining part for joining the display part to the unit in an angularly movable fashion.

Nishiyama teaches a display section 2 and a receiver section 1 having at least a speaker [receiver (speaker for outputting received voice sounds) 6]. A joining part [hinge 5] joins the display section to the receiver section in an angularly movable fashion. Nishiyama, col. 3, lines 20 – 31; and figure 1 and 6.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the configuration as taught by Nishiyama with the portable communications terminal as taught by Yeom. Nishiyama invites such combination by teaching,

Conventional portable radio telephone sets (hereinafter referred to simply as telephone sets) are not only provided with ordinary telephone functions, but also with an electronic telephone directory function by which telephone numbers and names can be registered, a help function for guiding various functions, an incoming call tone selection function for selecting incoming call tone, and the like, thus being formed as a multi-functional terminal. The conventional portable radio telephone set uses function buttons in order to select such functions. The operation of some terminals has been made easier by making the shape of function buttons different from that of the dial buttons.

When, for example, the electronic telephone directory function is used, first a telephone set user operates a function button for the electronic telephone directory function in order to call a telephone number stored in the electronic telephone directory onto a display section of the portable radio telephone set. Then, the telephone set user operates a function button for selecting the telephone number and a function button for scrolling the registered telephone numbers in order to call the wanted telephone number shown on the display section from among telephone numbers registered in the electronic telephone directory. When the wanted telephone number is confirmed on the display section by the above operation, the user operates a function button for starting a conversation in order to call the other party.

Though the conventional portable radio telephone set is multi-functional, the operation procedure thereof is complex for a user when the series of operations described above is considered. Furthermore, there is the possibility that the greater the number of buttons, the greater the chances that a button may be depressed erroneously when the button arrangement of a present portable radio telephone set is considered.

That is, in view of the complexity of such an operation procedure, it is not easy, as regards a conventional telephone set in which functions are selected by function buttons, to operate various buttons with only one hand while holding the telephone set itself in the same hand.

Nishiyama, col. 1, lines 16 – 58. Nishiyama adds,

It is an object of the present invention to provide a telephone set which makes it possible to easily perform various operations required particularly for conducting a radio telephone conversation with one hand while the telephone set itself is being held by the same hand.

It is another object of the present invention to simplify the procedure for selecting or operating a plurality of functions of the telephone set.

It is still another object of the present invention to provide a multi-functional telephone set, the number of buttons thereof being reduced as much as possible.

Nishiyama, col. 1, line 61 – col. 2, line 3.

Claim 3

Nishiyama teaches that the display part 2 includes a first member where the display surface 7 is provided, and a second member 4 joined to the first member in an angularly movable fashion. Nishiyama, col. 3, lines 20 – 31; and figure 1 and 6.

9. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Amano, USPN 5,691,747, in view of Wicks et al., USPN 6,519,480 B1 and Oda, USPN 5,703,932.

Claim 1

Amano teaches a portable communications terminal [personal data assistant (PDA)] comprising display part [display screen 13] for displaying an image and a main body having a pointing device [elastic member 1] for controlling at least a cursor displayed as the image.

Amano, abstract; col. 1, lines 7 – 13; col. 16, lines 28 – 37; and figure 13. A joining part for joins the display part to the main body in an angularly movable fashion. Amano, figure 13.

Amano does not teach a speaker on a main body for outputting voice.

Wicks teaches a speaker 17 on a wireless telephone unit 11 for outputting voice. A joystick 14 or other type pointing device controls a cursor on displayed image 16. Wicks, col. 3, lines 8 – 38; col. 4, lines 13 – 15; and figures 1.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the speaker on a wireless telephone unit as taught by Wicks with the portable communications terminal as taught by Amano. Wick invites such combination by teaching,

Since their introduction, wireless communication systems including pagers, cellular telephones and low-tier radio telephones, have become increasingly popular. Such devices provide an extremely convenient means of communication.

Wireless communication systems, particularly cellular telephones and low-tier radio telephones, are convenient because they allow their users to communicate from almost any location in a service area. Wireless phones also save time. For example, the user of a wireless telephone unit need not waste time looking for an available telephone in order to place a call.

A wireless telephone unit also allows its user to take advantage of time spent traveling. For example, with a wireless telephone, the user can be transacting business or making appointments while driving, riding or walking.

In order to utilize fully these advantages of wireless telephones, it should be convenient for the user to have the wireless telephone unit readily available at

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all times. In recognition of this fact, modern wireless telephones have become increasingly smaller and lighter to facilitate being carried by the user.

Moreover, a wireless telephone user who is walking or driving, may have only a single hand readily available to operate the wireless telephone unit. This consideration has lead to some attempts to design wireless telephone units that are easily operated with a single hand.

A typical wireless telephone may have a small liquid crystal display capable of displaying, for example, up to four lines of text. Using such a display, the user may scroll through stored data, such as a directory of telephone numbers, and select, for example, a number to be called. The display may also show a list of functions through which the user can scroll. When a function, such as speaker volume, is selected, the user can then input information or parameters to govern that function.

Accordingly, a wireless telephone unit with a display can be readily programmed and adapted to provide many features and functions that would not otherwise be available. However, as may be appreciated, the goal of providing a large, versatile, easily read display on a wireless telephone unit is at odds with the goal of providing a compact unit. Accordingly, there is a need for an improved wireless telephone unit that is both compact and ergonomic, but which also provides a large, versatile, easily read display.

Wicks, col. 1, lines 13 – 62. Wicks adds,

Accordingly it is an object of the present invention to meet the above-described needs and others. It is an object of the present invention to provide a wireless telephone unit which is compact and ergonomic and has a large, versatile, easily read display.

More particularly, it is an object of the present invention to provide a wireless telephone with a virtual dialer that can replace the standard keypad, thereby allowing more room for an enhanced display without increasing the size of the unit.

Wicks, col. 1., line 65 – col. 2, line 7. Wick concludes,

As described, the virtual dialer of the present invention replaces the required numeric keypad on a wireless telephone unit. This allows more room for an enhanced display while maintaining the compactness of the unit.

Wicks, col. 4, lines 16 – 19.

Neither Amano nor Wicks teach that the speaker is disposed on one main surface of the main body, and that the pointing device is disposed on the other main surface of the main body opposite from the one main surface.

Oda teaches a speaker 22 on the front surface of a case 2 of a cellular phone and a control mechanism [slide switch 24] on the rear side of the case. Oda, col. 3, lines 6 – 40; and figures 1 and 2.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the arrangement with the speaker on the front surface and a control mechanism on the back surface as taught by Oda with the portable communications terminal as taught by Amano and Wicks. Oda invites such combination by teaching,

It is, therefore, a purpose of the present invention to provide a compact and slim cellular telephone which allows the one touch signal transmission and which, still having the layout of operation keys in two rows, can reduce the number of operation keys.

Oda, col. 1, lines 42 – 46. Oda adds,

As described above, the cellular telephone can be easily gripped by the operator, and the position of the operation keys of the cellular telephone with the double row construction and the small width dimension can be recognized easily. The microphone and the speaker have a better sound collecting capacity.

Further, the cellular telephone has the feature that the groove is formed from the top of the case to the bottom end continuously running through the front surface of the case. Further, the operation keys have the feature that, when the case is gripped by the left hand with the antenna positioned upright, the operation keys of 0 through 9 are present of the row at the left hand thumb (the left hand side) and the function keys at the other side (the right hand side). Furthermore, it features that at least three small protrusions protruding from the case are provided along the groove and at the vicinity of the operation keys, the small protrusions are arranged in a row from the top end at the antenna side to the bottom end and the small protrusion at the center has a shape different from the other small protrusions to provide a different finger touch.

Oda, col. 6, lines 43 – 63.

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yeom et al. in view of Nishiyama et al. or over Amano, in view of Wicks et al. and Oda as applied to claim 1 above, and further in view of Adair et al.

Claim 2

Neither Yeom nor Nishiyama; nor Amano, Wicks, nor Oda teach that the portable communications terminal further comprises an auxiliary display, mounted in the main body, for displaying at least textual information.

Adair teaches that a portable communications terminal [PDA 22] further comprises an auxiliary display [visual display 196], mounted in the main body [externally mounted cellular telephone 190], in addition to the video view screen 26. It is inherent that a visual display 196 for a telephone would display at least textual information, e.g. telephone numbers, names, and messages. Adair, col. 7, lines 43 – 45; col. 11, lines 12 – 28; and figures 6a and 6b.

For the reasons stated in the discussion of claim 6 above, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the auxiliary display as taught by Adair with the portable communications terminal as taught by either Yeom and Nishiyama or by Amano, Wicks, and Oda.

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yeom et al. in view of Nishiyama et al. or over Amano, in view of Wicks et al. and Oda as applied to claim 1 above, and further in view of Imai, USPN 6,389,267 B1.

Claim 4

Neither Yeom nor Nishiyama; nor Amano, Wicks, nor Oda teach an answer button to answer an incoming call with the display surface of the display part covered by the main body.

Imai teaches an answer button [key 8B] to answer an incoming call with the display surface of the display part covered by the main body. Imai, col. 1, lines 8 –11; col. 5, lines 25 – 32; and figures 2A and 2B.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the answer button as taught by Imai with the portable communications terminal as taught by either Yeom and Nishiyama or by Amano, Wicks, and Oda. Imai invites such combination by teaching,

However, even in any of the above references, the problem in that the speech communication cannot be performed in the state in which the housings are not opened developed is not solved.

Imai, col. 2, lines 24 – 27. Imai adds,

The present invention is accomplished in view of the above problems. Therefore, an object of the present invention is to provide an improved folded type portable radio communication apparatus which can solve the above-mentioned problems.

Another object of the present invention is to provide a folded type portable radio communication apparatus in which communication can be performed in the closing state.

Still another object of the present invention is to provide a folded type portable radio communication apparatus in which a plurality of speech receiving sections or speech transmitting sections can be automatically switched.

Imai, col. 2, lines 35 – 42.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yeom et al. in view of Nishiyama et al. or over Amano, in view of Wicks et al. and Oda as applied to claim 1 above, and further in view of Kubota, USPN 6,295,358 B1.

Claim 5

Neither Yeom nor Nishiyama; nor Amano, Wicks, nor Oda teach that the joining part joins the display part to the main body in a detachable fashion.

Kubota teaches the joining part joins the display part to the main body in a detachable fashion.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the detachable hinge as taught by Kubota with the portable communications terminal as taught by either Yeom and Nishiyama or by Amano, Wicks, and Oda. Kubota invites such combination by teaching,

Various types of compact electronic devices such as cellular telephones, portable computers (with or without a communication function), electronic note-books, and game computers have come into general use with advances in electronics technology in recent years. These compact devices have flip members (hereinafter referred to as flip-type electronic device), which can be closed when the device is carried, and can be open to a specific size to make the device easy to operate when the device is in use.

For example, a cellular telephone has a flip member which can be opened and closed. Recently, a detachable flip member has become in wide demand.

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To make the flip member detachable from the device main body, the lip member is attached to the device main body by means of a hinge device. The conventional hinge device becomes complicated and large because it must include a mechanism to maintain the flip member at a predetermined angle when the flip member is opened and closed. To reduce the size of the hinge device, the hinge device must be simplified, and as the result, the flip member cannot be securely held at the predetermined angle. In addition, electrical connections between the device main body and the flip member cannot be established in a small limited space. When the detachable mechanism for the flip member is equipped with the conventional hinge device, these problems become more serious. Therefore, an improved hinge device, which reduces its size while maintaining the mechanisms for securely holding the flip member, for making the flip member detachable, and for establishing the electrical connections, become in demand.

Kubota, col. 1, lines 12 – 42. Kubota adds,

It is therefore an object of the present invention to provide a hinge device which has a simplified structure, securely holds a flip member, and reduces the size of the hinge device.

Kubota, col. 1, lines 45 – 48.

13. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yeom et al. in view of Nishiyama et al. or over Amano, in view of Wicks et al. and Oda as applied to claim 1 above or over Sigel in view of Adair et al. as applied to claims 6 and 9 above, and further in view of Giel et al., USPN 5,881,377.

Claim 13

Neither Yeom nor Nishiyama; Amano, Wicks, nor Oda; nor Sigel nor Adair teach a detection switch for detecting that the main body is being held by a user.

Giel teaches a detection switch 310 for detecting the main body being held by a user [by grips 120 and 122]. The display part is activated when the detection switch detects the main

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body being held by a user, and the display part is deactivated when the detection switch no longer detects the main body being held. Giel, col. 5, line 12 – col. 6, line 6; and figure 3 and 4. See steps 406 and 414 in figure 4. The detection switch [under grips 120 and 122] is mounted on the other main surface or a side face of the main body. Giel, col. 3, lines 38 – 66; and figures 1 and 2.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the detection switch as taught by Giel with the portable communications terminal as taught by either Yeom and Nishiyama; by Amano, Wicks, and Oda; or by Sigel and Adair. Giel invites such combination by teaching,

One design goal for communication devices including radiotelephones is minimization of power consumption from the battery. One reason for this goal is to permit the use of physically smaller, lighter batteries. Such smaller and lighter batteries permit the communication device itself to be physically smaller and lighter, and thereby more convenient for the user. A second reason for minimizing power consumption in a communication device is to extend the operating time of the communication device, which also enhances convenience for the user.

Displays in communication devices are one source of substantial power consumption. Such displays include multi-segment light emitting diode (LED) displays and liquid crystal (LCD) displays. LCD and other displays often include backlighting using one or more LEDs to improve night time visibility of the display. In addition, the display may include individual elements such as LEDs which are selectively energized to provide a user indication. Still further, many communication devices having keypads provide one or more LEDs for backlighting the keypad for visibility in the dark.

One known method of reducing power consumption in a communication device is blanking the display a predetermined time after operation of the keypad. The display is blanked by removing power from portions of the display. Such portions include specific LED segments or LEDs used for backlighting a LCD display. Only one or a few isolated illuminated elements, such as LED indicators, remain energized to provide a visual indication that the communication device is active. By blanking the display, power consumption can be substantially reduced.

Giel, col. 1, lines 31 – 62. Giel concludes,

As can be seen from the foregoing, the present invention provides a method and apparatus for controlling display blanking in a communication device such as a battery powered radiotelephone. The communication device includes a blanking timer which blanks the display a predetermined time after a key press. A switch detects when the communication device is in use. In response to this detection, the communication device maintains supply of operating power to the display, overriding the blanking timer. When a user is holding the communication device adjacent to the user's head, an earpiece sensor provides an indication of this condition. In response to the indication, the display is immediately blanked to conserve operating power in the battery.

Giel, col. 7, lines 33 – 45.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yamaguchi et al., USPN 6,400,392 B1; Iura et al., USPN 5,617,312; Sellers, USPN 5,821,922; and Hsieh, USPN 6,043,805, each teach apparatus and method for entering position data by means of a image detector.

Anderson, USPN 6,262,769 B1, Buxton et al., USPN 6,115,025; and Nagasaki et al., USPN 5,936,619, each teach an automatic orientation detector and screen rotation system.

Umezawa et al., USPN 5,941,507, teaches a video telephone to record and transmit video images.

Macor, USPN 5,841,849, teaches a dual module telecommunications device.

Miyashita, USPN 5,586,182, teaches a telephone having a gyro to detect orientation and to cut off power to the display.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leland Jorgensen whose telephone number is 703-305-2650. The examiner can normally be reached on Monday through Friday, 7:00 a.m. through 3:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven J. Saras can be reached on 703-305-9720.

Any response to this action should be mailed to:

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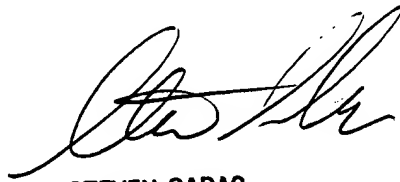
or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, telephone number (703) 306-0377.

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STEVEN SARAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600